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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/392,434	09/09/1999	LARRY L. BRADFORD	ACA6124PDUS	1107

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EXAMINER

SERGEANT, RABON A

ART UNIT	PAPER NUMBER
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1711

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	01/24/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

09/392,434

Applicant(s)

BRADFORD ET AL.

Examiner

Rabon Sergeant

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 November 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3, 5-11 and 13-16 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3, 5-11, and 13-16 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____.

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1. Claims 7, 8, and 13-16 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Firstly, within claims 7 and 13, the definition of R renders the claims indefinite, because, in view of the use of "about", it cannot be determined exactly how many carbon atoms are encompassed by the language, "an alkyl moiety containing from one to about five carbon atoms". Specifically, it is unclear what number of carbon atoms may exceed five and still be within the scope of the claim; for example, is an alkyl group of seven carbon atoms within the scope of the definition. Applicants' response has not clarified the issue. It remains unclear exactly how many carbon atoms are encompassed by the upper end of the range.

Secondly, within claims 15 and 16, despite applicants' argument, the position is maintained that the species, butylated triphenyl phosphate and isopropylated triphenyl phosphate, fail to further limit claims 7 and 13, respectively, because these species are outside the scope of the formulas within claims 7 and 13. It is by no means clear that applicants' definition of R within the independent claims allows for the aryl group to be substituted.

2. Claims 15 and 16 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

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Despite applicants' response, support has not been found for the species, isopropylated triphenyl phosphate. Contrary to applicants' assertions, this species has not been recited within page 3 of the specification or the species.

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

4. Claims 1-3, 5, 6, and 9-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fearing ('534 or '633) in view of Keppeler et al. ('612).

Fearing discloses the use of oligomeric organophosphorus flame retardants within polyurethane foams and further discloses that the oligomeric flame retardants may be blended with additional flame retardants. See column 8, lines 27-34 within the Fearing references. Fearing further discloses that the oligomeric organophosphorus compounds have hydroxyl numbers of 1 to 50. See column 8, lines 5-15. The oligomeric organophosphorus compounds of

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Fearing contain phosphate groups; therefore, it is proper to refer to the compounds as organophosphates.

5. Though Fearing discloses that additional flame retarding agents may be used, the primary references fail to recite specific examples. However, non-halogenated phosphate ester compounds were widely known flame retardants for polyurethane foams at the time of invention. This position is supported by the teachings of numerous such flame retardants within Keppeler et al. at column 7, line 33 through column 8, line 67.

6. Therefore, the position is taken that it would have been *prima facie* obvious to select a non-halogenated phosphate ester flame retardant from the numerous flame retardants of Keppeler et al. and employ said flame retardant as a component of the aforementioned, disclosed flame retardant blend of the primary references.

7. Claims 1-3, 5-7, 9-11, 13, 15, and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sicken et al. ('965) in view of Keppeler et al. ('612).

Sicken et al disclose the use of oligomeric phosphate flame retardants within polyurethane foams and further disclose that the oligomeric flame retardants may be blended with additional flame retardants. See column 4, line 32 within Sicken et al. Sicken et al. further disclose at column 4, line 41 that the oligomeric phosphate, corresponding to disclosed formula I, has a hydroxyl number of 30 to 300 mg KOH/g. It is noted that the lower end of this range clearly meets appellants' "no more than about 30 mg KOH/g" claim limitation. Furthermore, the poly(ethyleneoxy)phosphate of claims 15 and 16 is considered to be disclosed by Sicken et al.

8. Though Sicken et al. disclose that additional flame retarding agents may be used, the primary reference fails to recite specific examples. However, non-halogenated phosphate ester

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compounds were widely known flame retardants for polyurethane foams at the time of invention. This position is supported by the teachings of numerous such flame retardants within Keppeler et al. at column 7, line 33 through column 8, line 67. Flame retardants that correspond to those of claims 15 and 16 are disclosed at column 8, lines 53+.

9. Therefore, the position is taken that it would have been *prima facie* obvious to select a non-halogenated phosphate ester flame retardant from the numerous flame retardants of Keppeler et al. and employ said flame retardant as a component of the aforementioned, disclosed flame retardant blend of the primary reference.

10. Claims 7, 8, 13, and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sicken et al. ('965) in view of Keppeler et al. ('612), as applied to claims 1-3, 5-7, 9-11, 13, 15, and 16 above, and further in view of Hardy et al. ('035 or '042).

As aforementioned, the combined teachings of Sicken et al. and Keppeler et al. are considered to render obvious the use of a combination of oligomeric phosphate and non-oligomeric phosphate as a flame retardant blend for polyurethane foam; however, the non-hydroxyl group bearing oligomeric species of instant claims 7, 8, 13, and 14 are not disclosed by the primary reference. Still, the claimed non-hydroxyl group bearing oligomeric species were known flame retardants for polyurethane foams at the time of invention, as evidenced by Hardy et al. The position is taken that the oligomeric species of Hardy et al. are close enough in structure and function to those of the primary reference that one would have expected them to function, in accordance with the teachings of the primary reference, as viable oligomeric phosphate flame retardant components of flame retardant blends; therefore, the position is further taken that it would have been obvious to utilize the flame retardants of Hardy et al. in

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combination with the aforementioned non-oligomeric phosphate flame retardants of Keppeler et al., so as to arrive at the instant invention.

11. Applicants' response of November 2, 2006 has been considered; however, the response is insufficient to overcome the prior art rejections. Firstly, the transitional language, "consisting essentially of", fails to distinguish the instant invention from the prior art. Applicants have neither argued specifically why this language is believed to distinguish the claims nor established that any components of the prior art would have a material effect on the instant composition and are, therefore, excluded in view of the transitional language. Secondly, applicants' argument that the examiner has not provided the requisite motivation and/or suggestion in the prior art of record to support a *prima facie* case of obviousness is not well taken. The examiner maintains that a proper *prima facie* case has been set forth, and it is noted that this position is supported by the remarks within pages 8 and 9 of the Board of Patent Appeals and Interferences decision, mailed February 10, 2006. Lastly, applicants' examples have again been considered; however, the examples are not commensurate in scope with the claims, in terms of component species and amounts and ratio amounts. It has been held that to overcome a reasonable case of *prima facie* obviousness, a given claim must be commensurate in scope with any showing of unexpected results. *In re Greenfield*, 197 USPQ 227. It has additionally been held that a limited showing of criticality is insufficient to support a broadly claimed range. *In re Lemin*, 161 USPQ 288. *In re Kulling*, 14 USPQ2d 1056. For at least these reasons, applicants' examples are insufficient to rebut the *prima facie* cases of obviousness.

12. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

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A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication should be directed to R. Sergent at telephone number (571) 272-1079.


RABON SERGENT
PRIMARY EXAMINER

R. Sergent
January 20, 2007